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NEST-SITE SELECTION BY COMMON GRACKLES (*Quiscalus quiscula*)

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Unfortunately for sunflower growers, the breeding population of common grackles in North Dakota has nearly doubled in twenty years. Large flocks of these and other blackbirds congregate in North Dakota and feed on a variety of crops including sunflower. This feeding behavior can result in serious monetary losses to individual growers. Perhaps compounding the problem is a large, resident population of grackles which may attract blackbirds reared elsewhere. In 1989, we began an investigation into the common grackles' life history in North Dakota.

Common grackles begin breeding in North Dakota during late April and early May. This critical time in their life cycle may present excellent opportunities for population management. We hypothesize that breeding grackles colonize distinct nesting sites with singular environmental characteristics which enhance the birds' breeding success. Furthermore, these characteristics should be common in a majority of these colonies. Perhaps some of these characteristics could be altered, lessening their appeal and reducing the population density in localized areas.

Approximately 6% (314 quarter sections) of Benson County, North Dakota was censused for breeding grackles. The census was taken by counting nests that had either eggs or young, or that were defended by adults. Because common grackles are monogamous, one pair of breeding birds was attributed to each nest. Only 60% percent (188) of the censused quarter sections had suitable nesting habitat (i.e., vegetation > 1 m). Thirty-nine percent (74) of these quarter sections had at least 1 pair of grackles. The potential nesting habitat on the remaining 114 quarter sections was primarily agricultural shelterbelts and potholes.

The 74 quarter sections colonized by grackles were placed into 6 categories of habitat. More breeding pairs (N = 978) were found on quarter sections classified as inhabited dwellings than all other categories combined. Maddock and York had an extremely high number of nests (N = 212) considering that these towns accounted for only 3 quarter sections in the study area. The mean number of breeding pairs colonizing quarter sections with inhabited farmsteads (32.6) was 3 times larger then that for pairs colonizing quarter sections with abandoned dwellings.

Data were gathered on 5 randomly chosen nests from each of 84 grackle colonies found within the 74 colonized quarter sections. Vegetation species and height, diameter at breast height, nest height, ratio of nest height to tree height, and distances from water, dwellings, and crops were recorded. Similarly, data were collected from 5 potential nest-sites within each colony and 5 potential nest-sites within each colonized quarter section. Additionally, 35 quarter sections were randomly selected from the

remaining 114 uncolonized quarter sections with suitable nesting habitat. The same data were collected from 5 random potential nest-sites from each of these quarter sections. Within the colonies, grackles were apparently selecting nest-sites in Siberian elm (*Ulmus pumila*) and blue spruce (*Picea pungens*) but avoiding green ash (*Fraxinus pennsylvanica*).

Randomly selected nests, and concomitantly the random points within the colonies from which these nests were selected, were found within 500 meters of either abandoned or inhabited dwellings greater than 70% of the time. On the other hand, random potential nest-sites outside the colony or outside of the colonized quarter sections were within 500 meters of abandoned or inhabited dwellings only 35 and 23% of the time, respectively. Water, although consistently present, did not vary greatly among the 4 sampling strata.

Grackles may colonize sites that are conducive to successful breeding. It is possible that an advantage is conferred by the microenvironments created by human activities occurring around homes and would explain the predominance of colonies on inhabited quarter sections. The breeding population of common grackles in North Dakota may continue to increase. Grackles have not only gained new sources of food from man's agricultural activities but also have gained additional nesting habitat. Altering this habitat by planting tree and shrub species that would be less desirable to breeding grackles could reduce local population densities.